

MODIS Technical Team Meeting

November 18, 1994

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Steve Ungar, Chris Justice, Joann Harnden, Al Fleig, Locke Stuart, Ed Masuoka, Ken Anderson, Bill Barnes, Wayne Esaias, Harry Montgomery, John Barker, and David Herring.

1.0 SCHEDULE OF EVENTS

Nov. 29	SCAR B and C meeting at GSFC, at 8:15 a.m. in Building 22, Room 365
Dec. 12	MODIS Quarterly Review at GSFC
Dec. 31	Revisions of ATBDs receiving a grade of C or D due to EOS Project Science Office
Jan. 15, 1995	Semi-annual reports due to Barbara Conboy
Jan. 24 - 25, 1995	MODIS Ocean Discipline Group Meeting, in Miami, FL
Jan. 26 - 27, 1995	Workshop on international Calibration/Validation Efforts for EOS Ocean Color Sensors, in Miami, FL
May 2, 1995	MODIS Calibration Working Group (tentative)
May 3 - 5, 1995	MODIS Science Team Meeting (tentative)

2.0 MINUTES OF THE MEETING

2.1 MODIS Project Reports

Anderson announced that the MODIS Project Team will travel to El Segundo on Nov. 29 to inspect the Hughes facility. SBRC reported losing more software personnel this week due to the impending relocation to El Segundo. Anderson told the Team that the large clean room at SBRC is now under construction. SBRC tested their new tilting assembly this week and verified that it operates properly.

2.2 Spacecraft Maneuvers

Barnes reported that the letter from the MODIS Team Leader, regarding spacecraft maneuvers to enable MODIS to view the moon, had the desired effect—EOS Project is considering the maneuver. Barnes said he met with Chris Scolese and Piers Sellers recently to discuss the subject. Scolese feels that small maneuvers can be done, but any proposed major maneuvers must be studied further. Barnes stated that given a 25-degree roll of the spacecraft, MODIS can view the moon at the edge of the Earth-view swath, but he is concerned about the reflectivity of the scan mirror at other (greater) angles. Also, scattering off of the edge of the mirror may be a problem. He noted that Sellers wants to have a specific recommendation for maneuvers going into the next SWAMP meeting.

2.2.1 Request for Deviation on VIS/NIR Bands

Barnes reminded the Team of SBRC's request to slightly deviate eight of MODIS' VIS/NIR filters from specifications. He reported that Ed Knight, of MCST, analyzed the request and wrote a 38-page report on the topic (see Attachment 1). The report is being distributed to selected members of the Science Team. Barnes said the bottom line is that the MODIS Team accepts SBRC's proposed deviations.

2.3 Bright Star Catalog

Montgomery stated that there used to be concern that bright stars seen through MODIS' space viewport could cause a non-zero signal, resulting in a radiometric calibration error, especially in the 250-m detectors. According to the results of a recent analysis conducted by Bruce Guenther, bright stars will not significantly affect MODIS. Montgomery reported that MCST is devising strategies—such as software corrections—to allow for any “mavericks”, so a bright star catalog is not needed.

2.4 SDST Reports

Salomonson asked why SDST lists Geolocation Fields as part of MODIS' Level 1 data products. Masuoka responded that although Geolocation Fields is a 1A product, it is not a science requirement. It contains the locations of the center points (precise latitude and longitude coordinates) and angles to the sun and sensor for each 1-km pixel and static offsets for each 250-m and 500-m detector relative to the corresponding 1-km detector. He pointed out that it was called a “product” because it is archived in the same manner as science data products. However, it doesn't have to be listed as a product. It can instead be listed as a “file” that we archive, or as a parameter of MOD01 that is stored separately from the unpacked Level 1A data set. Storing the geolocation field separately from Level 1A, Level 1B, and Level 2 products reduces the storage volume required for these products since it does not need to be copied within each product.

2.4.1 MODIS Data Processing Allocation

Regarding EOSDIS' limited processing allocation for MODIS, Masuoka suggested that only processing Level 1A and 1B global data for the first 2 years may not be the best solution. He solicited input from the Team for various solutions, any or all of which may implemented at different times. For example, it may be possible for the first 2 years after launch to produce all MODIS products for certain geographic regions, during which time those regions will be moved periodically to ensure that the algorithms work globally.

In general, the Technical Team is not comfortable with the suggestion because they are concerned that it would too much dilute the scientific objectives and goals of EOS and MODIS. The Team feels that the current allocation is not acceptable. The general consensus is that the cost model is driving EOSDIS' allocations and that the model places greater emphasis on their organizational structure than on processing hardware and software.

Salomonson stated that the bottom line is that the allocation is very constrictive—it allows no contingency and no room for growth. He directed the Team to produce a coordinated response to EOSDIS that clearly states the Team's needs and concerns; he agreed to meet later with the discipline group leaders to discuss the issue further.

2.4.2 Quality Assurance Plan

Masuoka said that he emailed the third version of the Quality Assurance plan to the Science Team for comments around Oct. 28 but has received none. He said that he can prepare a set of comments on the plan, but at a later date team members will need to indicate how they will handle Q/A for their individual products.

Salomonson asked if quality assurance basically means validation. Fleig responded that it means validation at first, but that the Team must continue to prove that it is deriving the products it says it is deriving, as advertised. He is concerned that if quality assurance becomes the responsibility of the DAACs, it may be too expensive. He noted that although there is a need for more input from Science Team members on quality assurance, their current work on algorithm development takes priority.

Salomonson asked SDST to develop a generic Quality Assurance Plan initially. He said that it would seem that the TLCF should be responsible for quality assurance, not the DAACs.

2.5 Land Group Reports

Justice announced that there will be an ISLSCP SWAMP meeting at the end of February 1995, at which there will be a discussion of land cover products.

Justice reported that Martha Maiden, of NASA HQ, is making progress on the new Digital Elevation Model (DEM).

2.6 Ocean Group Reports

Esaias said he is organizing a workshop in Miami in January 1995 to discuss international calibration/validation efforts for ocean color sensors.

2.7 Processing MAS Data from the BOREAS Campaign

Ungar reported that he is processing MODIS Airborne Simulator (MAS) data from the BOREAS campaign and is working on making them available. Specifically, he is characterizing the instrument with regards to spectral calibration. Ungar found that characterization efforts done at Daedalus and at NASA Stennis were both flawed. He said that he is using Stennis' characterization data and NASA Ames is using Daedalus'.

Ungar feels that he now has a very good understanding of how the detectors in MAS' reflective bands are performing.

2.7.1 Data Simulation

Ungar reported that the technical exchange group that was instituted to create synergism on MODIS data simulation is making good progress.

2.8 MAST Reports

Herring announced that the MODIS Science Team Minutes are complete and are being reviewed.

3.0 ACTION ITEMS

3.1 Action Items Carried Forward

1. *MODIS Team*: Determine how, given the MODIS bowtie effect, MODIS images will be produced at launch. [This may be a suitable topic for discussion at the next Science Team Meeting.]
2. *Fleig and Ungar*: Interact with the group leaders prior to developing a MODIS data simulation plan for review at the next Science Team Meeting. [Work on this item is still in progress.]
3. *Masuoka*: Develop a strawman plan for dealing with the baseline MODIS allocation for review by the MODIS Science Team.
4. *Technical Team*: Produce and forward a coordinated response to the current EOSDIS processing allocation for MODIS.
5. *Masuoka*: Develop a set of comments from MODIS on the third version of the Quality Assurance plan and forward to the Team Leader for review.

4.0 ATTACHMENTS

NOTE: All attachments referenced below are maintained in MODARCH and are available for distribution upon request. Please contact David Herring, MAST Technical Manager, at (301) 286-9515, Code 920, NASA/Goddard Space Flight Center, Greenbelt, MD 20771 if you desire copies of any attachments.

"SBRC's Deviation Request for VIS/NIR Bands," by Ed Knight